

FORM PTO-1449
(Rev. 2-32)U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No.

00-1086-G

Serial No.

10/633,878

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use several sheets if necessary)

Applicant:

Letsinger, et al.

Filing Date:

08/04/03

Group: 1637

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U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate

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TS	1.	Brada, et al., "Golden Blot" – Detection of Polyclonal and Monoclonal Antibodies Bound to Antigens on Nitrocellulose by Protein A-Gold Complexes, <i>Analytical Biochemistry</i> , Vol. 42, pp. 79-83 (1984) U.S.
	2.	Dunn, et al., "A Novel Method to Map Transcripts: Evidence for homology between an Adenovirus mRNA and Discrete Multiple Regions of the Viral Genome, <i>Cell</i> , Vol. 12, pp. 23-36, (1997) U.S.
	3.	Hacker, "High performance Nanogold – Silver in situ hybridisation, <i>Eur. J. Histochem</i> , Vol. 42, pp. 111-120 (1998) U.S.
TS	4.	Ranki, et al., Sandwich hybridization as a convenient method for the detection of nucleic acids in crude samples, <i>Gene</i> , Vol. 21, pp. 77-85 (1983) U.S.
TS	5.	Romano, et al., "An antiglobulin reagent labelled with colloidal gold for use in electron microscopy," <i>Immunochemistry</i> , Vol. 11, pp. 521-522 (1974) Great Britain

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TS	1.	5,609,907	03/11/97	Natan			
TS	2.	6,025,202	02/15/00	Natan			
TS	3.	6,149,868	11/21/00	Natan, et al.			

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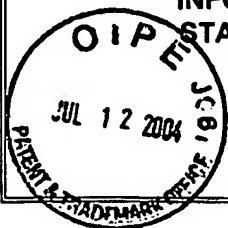
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TS	1.	5,288,609	02/08/94	Mroczkowski, et al.			
	2.	5,284,748	02/22/94	Engelhardt, et al.			
	3.	5,360,895	11/01/94	Hainfield, et al.			
	4.	5,384,265	01/24/95	Kidwell, et al.			
	5.	5,472,881	12/05/95	Beebe, et al.			
	6.	5,599,668	02/04/97	Stimpson, et al.			
	7.	5,637,508	06/10/97	Kidwell, et al.			
	8.	5,751,018	05/12/98	Alivisatos, et al.			
↓	9.	5,939,021	08/17/99	Hansen, et al.			
TS	10.	5,990,479	11/23/99	Weiss, et al.			

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							Yes	No
TS	11.	WO 93/10564	27 May 93	PCT				
	12.	WO 98/10289	12 March 98	PCT				
	13.	WO 99/23258	14 May 99	PCT				
↓	14.	WO 99/21934	06 May 99	PCT				
TS	15.	WO 99/20789	29 April 99	PCT				

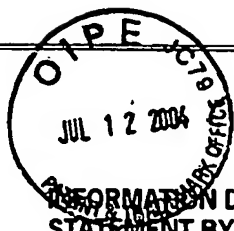
OTHER DOCUMENTS - Including Author, Title, Date, Pertinent Pages, Etc.

TS	16.	O.D. Velev, et al., "In Situ Assembly of Colloidal Particles into Miniaturized Biosensors," <i>Langmuir</i> , Vol. 15, No. 11, pp. 3693-3698, May 25, 1999
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TS	1.	5,830,986	11/03/98	Merrill, et al.	528	332	10/28/96
	2.	5,900,481	05/04/99	Lough, et al.	536	55.3	11/06/96
	3.	6,203,989	03/20/01	Goldberg, et al.	435	6	03/25/99
	4.	6,251,303	06/26/01	Bawendi, et al.	252	301.4R	09/18/98
	5.	6,277,489	08/21/01	Abbott, et al.	428	403	12/04/98
	6.	6,306,610	10/23/01	Bawendi, et al.	435	7.1	09/17/99
	7.	6,361,944	03/26/02	Mirkin, et al.	435	6	06/25/99
	8.	6,365,418	04/02/02	Wagner, et al.	436	518	05/18/00
TS	9.	6,417,340	07/09/02	Mirkin, et al.	536	23.1	10/20/00

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TS	10.	WO 93/25709	23 December 1993	PCT				
	11.	WO 98/04740	5 February 1998	PCT				
	12.	WO 98/17317	30 April 1998	PCT				
	13.	WO 99/60169	25 November 1999	PCT				
	14.	WO 00/33079	8 June 2000	PCT				
TS	15.	WO 01/00876	4 January 2001	PCT				

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TS	16.	WO 01/51665	19 July 2001	PCT				
	17.	WO 01/73123	4 October 2001	PCT				
	18.	WO 01/86301	15 November 2001	PCT				
	19.	WO 02/04681	17 January 2002	PCT				
	20.	WO 02/18643	7 March 2002	PCT				
	21.	WO 02/36169	10 May 2002	PCT				
TS	22.	WO 02/46483	13 June 2002	PCT				
TS	23.	WO 02/46472	13 June 2002	PCT				

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TS	24.	Letsinger, R., et al., "Chemistry of Oligonucleotide-Gold Nanoparticle Conjugates," <i>Phosphorus, Sulfur and Silicon</i> , Volume 144, p. 359-362 (1999)
TS	25.	Letsinger, R., et al., "Use of a Steroid Cyclic Disulfide Anchor in Constructing Gold Nanoparticle—Oligonucleotide Conjugates," <i>Bioconjugate Chem</i> , p. 289-291 (2000)

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TS	26.	Li Z., et al., "Multiple thiol-anchor capped DNA-gold nanoparticle conjugates," <i>Nucleic Acids Research</i> , Volume 30, p. 1558-1562 (2002)
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↓	29.	Wuelfing, P., et al., "Nanometer Gold Clusters Protected by Surface-Bound Monolayers of Thiolated Poly(ethylene glycol) Polymer Electrolyte," <i>J. Am Chem. Soc.</i> , Volume 120, p. 12696-12697 (1998)
TS		

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DISPENSARY DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date

FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation Yes No
	1.	WO 92/04460	10 March 1992	PCT			X
TS	2.	WO 90/02205	8 March 1990	PCT			X

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TS	1.	4,193,983	3/18/80	Ullman et al.			
	2.	4,256,834	3/17/81	Zuk et al.			
	3.	4,261,968	4/14/81	Ullman et al.			
	4.	4,313,734	2/2/82	Leuvering			
	5.	4,318,707	3/9/82	Litman et al.			
	6.	4,650,770	3/17/87	Liu et al.			
	7.	4,713,348	12/15/87	Ullman			
	8.	4,853,335	8/1/89	Olsen et al.			
	9.	4,868,104	9/19/89	Kurn et al.			
	10.	5,225,064	7/6/93	Henkens et al.			
	11.	5,294,369	3/15/94	Shigekawa et al.			
TS	12.	5,384,073	1/24/95	Shigekawa et al.			
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TS	14.	5,460,831	10/24/95	Kossofsky et al.			
	15.	5,472,881	12/5/95	Deebe et al.			
TS	16.	5,514,602	05/07/96	Brooks, Jr. et al.			
	17.	5,521,289	5/28/96	Hainfeld et al.			
	18.	5,543,158	8/6/96	Gref et al.			
	19.	5,571,726	11/05/96	Brooks, Jr. et al.			
	20.	5,665,582	9/9/97	Kausch et al.			
TS	21.	5,681,943	10/28/97	Letsinger et al.			

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		Document Number	Date	Country	Class	Subclass	Translation Yes No
TS	22.	WO 89/06801	7/27/89	PCT			
TS	23.	WO 97/40181	10/30/97	PCT			
TS	24.	WO 98/04740	2/5/98	PCT			
	25.	WO 99/23258	10/30/98	PCT			
TS	26.	0 630 974 A2	12/28/94	EPO			
TS	27.	0 667 398 A2	8/16/95	EPO			

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TS	28.	Alivisatos et al., "Organization of 'nanocrystal molecules' using DNA," <i>Nature</i> , Vol. 382, pp. 609-611 (1996)
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↓	34.	Chen et al., "Crystal Structure of a Four-Stranded Intercalated DNA: d(C ₄) <i>Biochem.</i> , Vol. 33, pp. 13540-13546 (1994)
TS	35.	Dagani, "Supramolecular Assemblies DNA to organize gold nanoparticles," <i>Chemical & Engineering News</i> , p. 6-7, August 19, 1996

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✓	48.	Mulvaney, "Surface Plasmon Spectroscopy of Nanosized Metal Particles," <i>Langmuir</i> , Vol. 12, pp. 788-800 (1996)
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	58.	Weisbecker et al., "Molecular Self-Assembly of Aliphatic Thiols on Gold Colloids," <i>Langmuir</i> , Vol. 12, pp. 3763-3772 (1996)
	59.	Wells, "Unusual DNA Structures," <i>J. Biol. Chem.</i> , Vol. 263, pp. 1095-1098 (1988)
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	2.	5,751,018	05/12/98	Alvisatos, et al.			
	3.	5,990,479	11/23/99	Weiss, et al.			

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	7.	Storhoff, et al., "One-Pot Colorimetric Differentiation of Polynucleotides with Single Base Imperfections Using Gold Nanoparticle Probes," <i>J. Am. Chem. Soc.</i> , Vol. 120, pp. 1961-1964, American Chemical Society (1998) U.S.
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	9.	Velev, et al. "In Situ Assembly of Colloidal Particles into Miniaturized Biosensors," <i>Langmuir</i>, Vol. 15, No. 11, pp. 3693-3698, American Chemical Society (1999) U.S.

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FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation Yes No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc).

TS	10.	Zhu, et al., "The First Raman Spectrum of an Organic Monolayer on a High-Temperature Superconductor: Direct Spectroscopic Evidence for a Chemical Interaction between an Amine and YBa ₂ Cu ₃ O _{7-δ} ," <i>J. Am. Chem. Soc.</i> , Vol. 119, pp. 235-236, American Chemical Society (1997) U.S.
TS	11.	Yguerabide, et al., "Light-Scattering Submicroscopic Particles as Highly Fluorescent Analogs and Their Use as Tracer Labels in Clinical and Biological Applications," I. Theory, <i>Analytical Biochemistry</i> , Vol. 262, pp. 137-156 (1998) U.S.
TS	12.	Yguerabide, et al., "Light-Scattering Submicroscopic Particles as Highly Fluorescent Analogs and Their Use as Tracer Labels in Clinical and Biological Applications," II. Experimental Characterization, <i>Analytical Biochemistry</i> , Vol. 262, pp. 157-176 (1998) U.S.

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FORM PTO-1449 (Rev. 2-32)	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No.	Serial No.
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		00-1086-G	10/633,878
		Applicant:	
		Letsinger, et al.	
		Filing Date:	Group: 1637
		August 4, 2003	4645



U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
TS	1.	4,996,143	02/26/91	Heller, et al.	435	6	04/13/90
	2.	5,508,164	04/16/96	Kausch, et al.	435	6	10/29/93
	3.	5,922,537	07/13/99	Ewart, et al.	435	6	11/8/96
	4.	5,972,615	10/26/99	An, et al.	435	6	01/21/98
	5.	6,264,825	07/24/01	Blackburn, et al.	205	777.5	06/23/99
TS	6.	6,214,560	04/10/01	Yguerabide, et al.	435	7.1	04/18/97

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		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
TS	7.	WO 94/29484	12/22/94	PCT				
TS	8.	WO 00/25136	05/04/00	PCT				

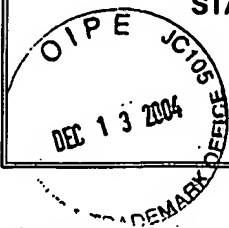
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc).

TS	9.	Mohanty J., et al. "Pulsed laser excitation of phosphate stabilized silver nanoparticles," <i>Proc. Indian Acad. Sci.</i> , Vol. 112, No. 1, p. 63-72.
TS	10.	Nicewarner- Peña S., et al., "Hybridization and Enzymatic Extension of Au Nanoparticle-Bound Oligonucleotides," <i>J. Am. Chem. Soc.</i> , Vol. 124, p. 7314-7323 (2002)
TS	11.	Whitesides G.M., et al., "Soft Lithography in Biology and Biochemistry," <i>Annu. Rev. Biomed. Eng.</i> , p. 335-373 (2001)

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Form PTO-1449	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 00-1086-G	Serial No. 10/633,878
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicant: Letsinger, et al.	
		Filing Date: August 4, 2003	Group: 5233 1637



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	1.	6,361,944	03/26/02	Mirkin, et al.	435	6	06/25/99
	2.	6,417,540	07/09/02	Mirkin, et al.	536	23.1	10/20/00
TS	3.	6,495,324	12/17/02	Mirkin, et al.	435	6	10/20/00
	4.	6,506,564	01/14/03	Mirkin, et al.	435	6	06/26/00
	5.	6,582,921	06/24/03	Mirkin, et al.	435	6	09/20/01
	6.	6,602,669	08/05/03	Mirkin, et al.	435	6	07/11/01
	7.	6,610,491	08/26/03	Mirkin, et al.	435	6	09/28/01
	8.	6,645,721	11/11/03	Mirkin, et al.	435	6	09/20/01
	9.	6,673,548	01/06/04	Mirkin, et al.	435	6	09/28/01
	10.	6,677,122	01/13/04	Mirkin, et al.	435	6	10/11/01
	11.	6,682,895	01/27/04	Mirkin, et al.	435	6	10/12/01
	12.	6,709,825	03/23/04	Mirkin, et al.	435	6	09/28/01
	13.	6,720,147	04/13/04	Mirkin, et al.	435	6	10/12/01
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	15.	6,726,847	04/27/04	Mirkin, et al.	216	90	11/30/01
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	17.	6,740,491	05/25/04	Mirkin, et al.	435	6	09/28/01
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TS	30.	2003/0068638 A1	04/10/03	Mirkin, et al.	435	6	08/02/02
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	46.	WO 00/33079 A1	06/08/00	PCT				
	47.	WO 01/00876 A1	01/04/01	PCT				
	48.	WO 01/051665 A2	07/19/01	PCT				
	49.	WO 01/073123 A3	10/04/01	PCT				
	50.	WO 02/004681 A3	01/17/02	PCT				
	51.	WO 02/018643 A3	03/07/02	PCT				
	52.	WO 02/046472 A3	06/13/02	PCT				
TS	53.	WO 02/079490 A3	10/10/02	PCT				
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	57.	WO 2003/081202 A3	10/02/03	PCT				
	58.	WO 2003/087188 A1	10/23/03	PCT				
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	60.	WO 2004/004647 A3	01/31/04	PCT				
TS	61.	WO 2004/053105 A2	06/24/04	PCT				

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